W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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In This Issue...

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FCC PLANS FOR THE FUTURE, PRESENTS FISCAL YEAR 2002 BUDGET

"I cannot predict the future, nor can anyone else at the Commission. When faced with future challenges that are uncertain, the best approach is to build a first-class operation, with top talent, that is trained and disciplined enough to adapt quickly to new and changing situations. No army, for example, can know in advance what it will find when it engages on the battlefield. The fog and terror of war never afford the luxury of predictability. The key to success is to have a force that is well-trained in tactics, strategy and the weapons it will need. A force that is disciplined and able to adjust quickly and adapt to fluid conditions – threats and opportunities both will present themselves through the haze. I hope to build, along with my colleagues and the outstanding FCC staff, just such a unit—one well suited to an uncertain future."

Testimony by FCC Chairman Michael Powell before House Sub-committee on Appropriations.

The FCC's funding for Fiscal Year 2002 (which starts October 1, 2001) has been established at $248,545,000 -- an increase of $18,545,000 over the FY 2001 appropriation level of $230,000,000. It is part of the administration's near-$2 trillion spending plan.

The Commission's staffing level is set at 1,975 "full-time equivalents." (An FTE is equal to one full time staff employee.) This is actually less staff people. The productivity gains are accomplished through its modern information technology underpinning.

Much of increase – 41 percent – of the requested FY 2002 funding level ($7,614,000) covers mandatory cost increases for salaries, benefits, rent and other inflationary increases ...such as a $1.6 million increase in the cost of contract services. The commission contracts out all of its computer programming work.

Most of the budget increase ($10,997,000), however, is earmarked for state-of-the-art technology improvements and includes funds to replace outmoded equipment, maintenance of electronic filing systems and "...productivity enhancements to the Commission's information technology infrastructure."

The equipment needs were originally identified in the 1990's and scheduled (but not funded) for replacement in both FY2000 and FY2001. The Commission has been one of the leading federal agencies to embrace doing business online, and to keep the trend going it says it needs to quickly replace obsolete data processing equipment and upgrade its current systems. Some FCC equipment is so old that engineers have had to build their own in some cases to get their work done.

In the past few years, the FCC has streamlined their licensing procedures and implemented widespread electronic filing capability. Last year, more than two thirds of the well over three million FCC

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applications were handled electronically. The percentage is much higher in the Amateur Service where nearly all new, renewed, modified and Vanity Call Sign requests can be filed online using a personal computer.

The commission now has 18 major information technology systems that incorporate electronic filing or offer public access to data. The public can file most license requests, equipment authorizations, and comments online.

FCC Chairman Michael Powell went before the House Appropriations Subcommittee to appeal for the budget increase and to tell them of his priorities for the future. "We are asking you to invest $248.5 million dollars to ensure that the FCC has the tools to facilitate its reform efforts, upgrade its technological capabilities and further enhance its workforce." He noted that the FCC achieves its mission through a combination of manpower and technology "...from electronic auctions, to automated licensing, and innovative spectrum management techniques."

"...the Commission is experiencing a challenge it has never faced — each industry segment in our portfolio is in the midst of revolution, and is attempting to adapt to fundamental economic and technological changes. There are new markets, new competitors, and new regulatory challenges."

Powell mentioned that the number of potential users and uses increases dramatically each year. "Instead of primarily focusing on broadcasters and hardwired phones, we concentrate on expanding the spectrum to accommodate new technologies like third-generation wireless and ultra-wideband. ...Broadband Internet products are still being developed and we all wait to see what service offerings consumers will and will not embrace. It is a world of dynamic and chaotic experimentation and unpredictable change."

Powell said the commission expects to collect nearly $219 million in fiscal 2002 through its congressionally-mandated "Regulatory Fees Cost Recovery Program" so the FCC budget request represents only about a $30 million direct charge to the General Fund of the Treasury. Radioamateurs do not pay any application fees, but are assessed a $14.00 regulatory fee to recover the FCC's cost to issue a Vanity call sign.

"Funding at this level will create a more efficient, effective and responsive agency," Powell stated. He also mentioned the FCC's ability to produce hundreds of millions of dollars in revenue for the U.S. Treasury through its responsibility to auction the spectrum.

The chairman said part of the agency's allocated funds would be used to implement an organizational restructuring at the FCC and to develop a new training and development program to improve the staff's technical and economic expertise. "Over the past six years, our engineering staff has decreased by 20%, and within the next four years, 40% of that staff will be eligible to retire."

He emphasized that the Commission must examine creative ways to attract the "best and the brightest" technical talent. Replacing those employees will be difficult, especially since government service isn't nearly as lucrative as jobs in the private sector. To address this situation the Commission is developing an agency-wide "Excellence in Engineering" program.

"Increased salaries alone, however, will not do the trick, nor is it the sole motivator for anyone entering government service. While government service in and of itself should elicit a sense of pride, we will increase our technical employees' worth by ensuring that they are able to continue to develop in their field, through strong training and development programs and job rotation." The FCC has already begun to train their non-technical staff in the areas of engineering through an "FCC University" of sorts using their own staff and guest lecturers.

It is anticipated that the FCC will restructure their organization along functional rather than technical lines and it will proceed in phases. The Enforcement and Consumer Information Bureau is a start and the Commission is looking at the possibility of adding additional Spectrum Management, Licensing and Competition Bureaus.

Besides restructuring the FCC, Powell's initiatives include making the FCC a more 'employee-friendly' workplace, launching an extensive internal training and development program and letting all FCC staffers "telecommute" to work at least part of the time.

"Employees should have a fair opportunity to work from home, providing greater flexibility to meet the demands of modern family life. That is why the Commission undertook an ambitious rollout plan for telecommuting last year. Approximately 400 of our eligible employees, about 20 percent, have chosen to telecommute on either a regular or ad hoc basis."

Powell told the House subcommittee that he "...intends to leave the Commission better than it was when he got here, to improve its ability to function today, tomorrow and in the next century. Let us take advantage of our fresh start, our new relationship, to implement real change at the Commission."

"We are not here to find a solution to every problem related to communications. We cannot handle everyone's telephone bill, review every cellular tower siting, or ensure that everyone in the United States has access to the most expensive equipment in his or her home. We can promote an atmosphere of competition where we step into the picture to ensure fairness of process, to stop predatory and anti-competitive behavior, and to make certain that the airwaves are free from clutter and pirates. We can and should make certain that the public interest and public safety are protected, while recognizing that we must work within the 4-corners of our statutory mandate."

AMATEUR 40-METER HAM BAND PREDICAMENT

Besides considering revising the international Amateur Service regulations, WRC-2003 will also be discussing the possible harmonization of the worldwide 40-meter band – a longstanding problem first identified at WARC -92. WRC-03 is scheduled to begin June 9, 2003, and continue until July 4, 2003.

High Frequency Broadcasting (HF) also known as Shortwave Broadcasting is an international broadcast service where transmissions are intended to be received by the general public in foreign countries. Due to the nature of shortwave propagation, these broadcast signals propagate very long distances and are subject to interference from HF stations around the world. As a result, the HF frequency bands are extremely congested (particularly the lower frequency ranges). The worldwide demand for usable HF frequencies far exceeds the capacity of the allocated frequency bands.

Amateur allocations have been based, in part, on the desirability of having a choice of relatively narrow frequency bands with different propagation properties distributed throughout the spectrum. The Amateur 40-meter band is the major communications medium between 4 and 14 MHz and is in heavy use 24 hours each day.

During daylight hours, the band carries the bulk of amateur sky wave communication over distances of less than 1300 km. During the winter and periods of low solar activity, and at other times when the maximum usable frequency (MUF) falls below 10 MHz, it must support the bulk of amateur intercontinental communication during the hours of darkness.

An *International Amateur Radio Union* information paper sums up the 40-meter issue this way:

"Several administrations are planning to propose at WRC-2003 the deletion of the existing international regulatory requirement that amateur operators must demonstrate Morse code proficiency before being licensed to operate below 30 MHz. It is anticipated that this proposal will be adopted.

"This will have an immediate and dramatic effect upon the occupancy of the HF amateur bands, including the 7-MHz band. Hundreds of thousands of presently licensed amateurs who are now restricted to frequencies above 30 MHz will be able to use the HF bands

"In addition, a large influx of new licensees will enter the amateur service once the Morse code is no longer required for HF operation. These effects could easily double the occupancy of the 7-MHz band by 2005.

"Crowding in the amateur service allocation will become even more severe as the variety of emission modes continues to expand and as new stations are licensed."

Amateur allocations in the 40 meter band

At the present time, Amateurs in ITU Region 2 (the western hemisphere) have a band of 300 KHz from 7000 to 7300 kHz, while amateurs in the rest of the world have only 100 kHz, from 7000 to 7100. In those countries, the rest of the band from 7100 to 7300 is allocated to the 41 Meter International Short Wave Broadcast Band.

Before 1938 the Amateur Service was allocated 300 kHz, 7000-7300 kHz, on a worldwide basis. At the 1938 Cairo Conference, the 300 kHz was reduced to 150 kHz for Regions 1 and 3 at the insistence of the Europeans. The allocation was further reduced to 100 kHz for Regions 1 and 3 at the 1947 Atlantic City Conference. The 200 kHz from 7100-7300 kHz was reallocated to the HF broadcasting service on a primary basis for Regions 1 and 3 for broadcasting within those regions – only the band 7000 to 7100 kHz is available for exclusive amateur use worldwide.

Although the amateurs in Region 2 retained a 300 kHz exclusive allocation, 7000-7300 kHz, they have to protect the HF broadcasting service in Regions 1 and 3.

At WARC-92, a U.S. proposal for allocation of a band above 7200 kHz to HF broadcasting with the worldwide 40-meter ham band being shifted down 100-kHz to 6900-7200 kHz was not accepted. However, at Mexico's initiative, Recommendation 718 was adopted calling for a realignment of the amateur and HF broadcast bands around 7 MHz at a future conference.

WRC-2003 to consider 40 meter band

A CEPT (European) position was presented at WRC-97 that supported action at WRC-99 to carry out a realignment of the bands around 7 MHz and set out a number of facts and principles on which the re-alignment should be based. The proposed agenda item was eventually agreed to for inclusion in the provisional agenda for WRC-2003. Agenda item 1.23 includes Recommendation 718.

To eliminate sharing with HF broadcasting in the 7100-7300 kHz band, a separate 300 kHz band aligned worldwide around or 7 MHz is being sought by the IARU with HF broadcasters operating above the amateur allocation. It will not be easy to obtain this allocation and there is much opposition from HF broadcasters (who would have to relocate) and the Fixed Service which has a primary allocation at 6765-7000 kHz.

The FCC's WRC-2003 Advisory Committee has approved several "preliminary views" – or PVs – on expected WRC-03 agenda items. Among these is an April 17th PV supporting a realigned 40-meter amateur allocation at 6900-7200 kHz on a worldwide primary basis. The PV says that, "...alternatively, the US could support a 7000-7300 kHz worldwide primary amateur allocation."

We have heard rumors that ITU Regions 1 and 3 (the rest of the world) may be willing to settle for an Amateur Service expansion to 200 kHz (from 7000 to 7200 kHz) and support a worldwide Broadcast allocation from 7200 to 7300 kHz as a trade off.

This would double the 40-meter ham band in the Eastern hemisphere but decrease the band in the Americas by 100 kHz.

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CUTTING EDGE TECHNOLOGY

Intel Corp., the world's largest chip maker, says it has developed the fastest and smallest transistor ever ...only 20 nanometers (0.02 microns) in size. A nanometer (one billionth of a meter) is about 10,000 times narrower than a human hair. By comparison, the transistors found in today's fastest chips measure 0.18 microns. The transistors will not be used in processors until 2007.

Powered by only one volt, the chip contains close to 1 billion transistors and runs 25 percent faster at 20 gigahertz. Intel's latest microprocessor. The 1.7 volt Pentium-4 processor contains about 42 million transistors and speeds along at 1.7 gigahertz. The first "fully transistorized" computer, built by IBM in 1954, had 2,000 transistors.

EMERGING COMMUNICATIONS

Even though no proof exists that RF exposure causes cancer, the world's largest cell phone manufacturers are taking no chances. According to *The (British) Times,* Nokia, Ericsson and Motorola all have developed new components to shield users from mobile phone radiation.

Patents filed with the U.S. Patent Office suggests that the manufacturers have been working on radiation-reducing components for at least eight years. The companies maintain that there is no contradiction between their public stance and the existence of the patents.

The Times said that "The patents are now to be used as evidence in a series of U.S. lawsuits launched this year..." Full story at: <http://www.thetimes.co.uk/-article/0,,2-2001194648,00.html>

COMPUTER INFO

Paper ballots are on the way out. The Nov. 7, 2000 presidential election taught American voters two important lessons: "Your vote counts," and, "your vote may not be counted." For weeks after the election, the world was made well aware of Florida's misleading ballots, contradictory counting standards and discarded votes.

Two Texas companies have now joined forces to come up with a low cost electronic voting system. Dell Computer Corp. (Round Rock, TX) and Hart InterCivic, Inc. (Austin, TX) are teaming up to manufacture and market easy-to-use, affordable voting systems that they say will enable accurate, accessible and secure elections through the innovative use of technology.

Available exclusively from Dell, Hart InterCivic's "eSlate Electronic Voting System" (about the size of a loose-leaf binder) simplifies and streamlines the complicated balloting, tabulation and reporting process.

"Touch screen" voting systems cost around $7,500 to $10,000 per unit. The eSlate tablet is only $2,500. The main server ($3,500) can control up to 12 tablets and is connected to its own secure, private network, not the Internet.

For an extra $1,000 the system can be configured to help visually impaired or disabled voters as well as those who have trouble reading. Accessories include an audio ballot reader, interfaces that allows voters to cast their ballot using only their breath or moving their head and a specially designed polling booth. The eSlate system is also has provisions for absentee voting by mail and voter registration.

eSlate has a Rotary Select™ dial that allows voter navigation through the electronic ballot. The voter simply places the curser on the name of a candidate, presses the "vote" button, and then moves on to the next race. The system doesn't allow more than one vote per race and, if a spot is left blank, it prompts the voter to make sure that is what was intended.

The eSlate has already been used in Texas and Colorado elections and is being shown around the country to election officials in other states and counties. Voters trying the system give it high marks. Ninety-one percent of voters say the system is easy to use and 97 percent expressed an interest in electronic voting in the future.

With sales approaching $33 billion, Dell Computer Corp. is well known. Basically unknown to the public, Hart InterCivic has been delivering election products and services to county and municipal governments for 90 years.

Fourteen percent of all U.S. counties already use Hart InterCivic products which include paper ballots, voting booths, ballot boxes and other printed supplies. See: <www.hartintercivic.com> on the web.

The most recent (and questionable) advance in Web advertising is the so-called "pop under" ad. These annoying display advertisements are placed on your PC by an advertiser underneath all of the content displayed on your screen. You surprisingly find them when you are closing down various applications on your computer.

Sometimes you get another doubly annoying "pop up" ad when you try to close the "pop under" window.

<www.X10.com>, a big proponent of "pop under" advertising, uses them for their wireless video cameras. You have probably seen them and wondered where they came from. This type of advertising is obviously very successful since (according to the May 2001 traffic report from Jupiter Media Metrix) X10.com's Web site was visited 28.6 million times making the fifth most visited Web site in May!

Which brings us to the question: "Is it legal to photograph video content of people – such as on sidewalks, at your front door or on traffic cams – without their knowledge or consent?" Apparently it is as long as it is done in a public place where the individual has no expectation of privacy.

Neither the *Fourth Amendment* (which protects people against illegal searches) nor the *Electronic Communications Privacy Act* (which prohibits "wiretapping" ...intercepting wire, oral or electronic communications) applies. Furthermore, the ECPA pertains only to audio and not video content.

INTERNET NEWS

According to a report from Nielsen/NetRatings, nearly one half of U.S. households now have Internet access via a home PC. This compares to one-third of households in the Asia- Pacific region and just over a quarter of European households. Access to the Internet is now available to 429 million people worldwide ...a 100 million gain in just the previous year alone!

Germany, the United Kingdom and Italy together account for half of those online in Europe. Nearly half of all households in South Korea have Web access.

The rapid growth in the number of Internet users is fueling a huge growth in electronic commerce.

Two-thirds of U.S. users and 40 percent of other users in developed countries have bought something online.

Africa and the Middle East have the least number of PC's with Web access (less than 1-percent penetration in Africa, less than ½-percent of people in the Middle East.)

While awareness of the Internet is nearly universal in developed countries, at least one in four people in urban areas of China, India, Russia and the rest of the developing world have yet to even hear of the Internet.

About 15 percent of North American online households now have broadband (high speed) Internet access. Seventy percent of those with high speed access (or 6.4 million people) have a cable modem. The other 2.9 million are DSL subscribers.

Gartner Dataquest predicts there will be 137.5 million wireless data subscribers in North America by 2005, up from 7.3 million last year.

Mergers and acquisitions have turned already powerful companies into even more dominant media giants. The total number of companies that control 60 percent of all minutes spent online in the U.S. dwindled 87 percent, from 110 in March 1999 to just 14 in March 2001.

According to Jupiter Media Metrix, AOL-Time Warner subscribers account for one third of all U.S. online usage in minutes. Seventy percent of the time they are "Communicating!" ...sending e-mail, instant messages and greetings.

Microsoft sites and Yahoo! were a distant No. 2 and 3 with a 7.5 and 7.2 percent share of all time spent online.

Yahoo! is still the most popular search engine in the world, used by 41.47 percent of users. Google is second with 13.87 percent, followed by MSN with 12.91 percent, and AOL with 5.4 percent.

If Yahoo! doesn't find any matches for your search in its own database, it will provide you with results from Google, a Yahoo! partner. Google (my personal favorite) specializes in indexing every single web page it can find.

The Financial Times (United Kingdom) reports that Iranian police have shut down over 400 cybercafés, supposedly because the state telecommunications monopoly, the PTT, is worried about losing business to the private sector. Cybercafés have thrived in the past year in Tehran as young people gather in them to browse the Web and make cheap long-distance phone calls over the Internet. There were over 1,500 before the crackdown, and many of these had only one computer. The cafés were charged with operating without a permit even though there were no licensing procedures in place.

The China Post (newspaper) says Saudi Arabia will use new advanced equipment to block access to another 200,000 web sites the authorities there consider offensive, thereby doubling the number of sites on the banned list. But forty-four percent of the 490,000 Internet users in Saudi Arabia are able to use proxy servers located in other countries to gain access to the banned sites. Saudi Arabia only allowed public access to the Internet in 1999 and the number of users is growing at 20 percent annually.

WASHINGTON WHISPERS

Want to get copies of FCC fact sheets, consumer brochures and alerts, News Releases, Public Notices, Notices of Proposed Rulemaking, Reports and Orders, and other consumer-related information sent directly to your PC? The FCC has a new, free e-mail service to apprize consumers about developments at the FCC. This service is operated by the Consumer Education Office in the FCC's Consumer Information Bureau.

You can subscribe to the FCC consumer publications service by submitting a subscription request by e-mail to the following address: subscribe@info.fcc.gov

Put the following request in the subject line or in the body of the message (not both): subscribe fcc-consumer-info firstname lastname (replace with your real first name and last name)

To unsubscribe send the following request (using the same procedure): unsubscribe fcc-consumer-info

Those who have difficulties subscribing to this list should send an e-mail message to lneely@fcc.gov for assistance.

The Bush administration has named Mark A. Forman as the U.S. government's top technology official. He is charged with making federal Internet operations more consistent and effective.

Forman would oversee a three-year, $100 million fund proposed by the Bush administration to coordinate the Internet operations of federal agencies and cut down on paperwork by enabling digital signatures and placing more documents online.

He is also expected to develop a comprehensive information technology policy and beef up <www.firstgov.gov>, the cross- agency government portal. Forman was previously Vice President, E- Business at Unisys Corp. *(Reuters)*

Acting with other federal enforcement agencies, **the FCC arrested pirate radio broadcaster Ibar (Robert) Mohamed in New York City on May 22nd.** He had been operating an unlicensed FM radio station on 89.3 MHz in Queens, NY and Brooklyn, NY.

The FCC had warned Mohamed several times to cease operation of the unlicensed station and federal authorities had seized his radio equipment on two previous occasions.

In the last 18 months, FCC investigations have resulted in the shutdown of over 300 unlicensed stations.

AMATEUR RADIO

Sadly, effective 5/24/01, **Kachina Communications, Inc. of Cottonwood, Arizona discontinued production of all HF radio products,** including their innovative computer-controlled amateur radio rig and its related accessories. The 505DSP was the hit of the 1997 Dayton HamVention. It went QRT exactly 4 years later ...almost to the day!

Kachina's Vice President, Cameron Earnshaw said the reason for discontinuing the line is "...the reduced worldwide demand for amateur radio in general, and HF radio in particular." He added that it was not an easy decision to make since many of their top management are hams.

In a letter to the amateur community, Earnshaw said "...it has become obvious that most companies manufacturing amateur radio products these days (including the top Japanese brands) do so out of a labor of love, supporting the losses from other more-profitable ventures. Unfortunately, we do not have the resources of a

Kenwood or Yaesu, and simply cannot afford to support an unprofitable product line indefinitely." Kachina Communications, Inc. will remain in business in Arizona and will concentrate on their Swift Wireless line of broadband wireless Internet products and services.

Kachina said it will continue to provide service and spares for all Kachina HF radio products for the foreseeable future, and will honor all factory warranties through the duration of the warranty period. "The amateur radio products remaining in our inventory will be made available through our web site at clearance prices." <http//www. Kachina-az.com>.

Their 505DSP computer-controlled HF (10 to 160 meters transmit, 30 kHz to 30 MHz receive) transceiver has now been reduced from a recommended list price of $2419 to $1095 (90 day warranty.) You need to supply your own PC (running Windows 3.1, 95, 98 or NT) and a 25-amp 12-V power supply. The rig plugs into your computer's serial port.

Kachina's lead design engineer for the 505DSP, Doug Smith KF6DX will be joining Ten-Tec's engineering staff effective July 1st. Doug, a respected technical author on cutting-edge amateur radio technology, is also editor of ARRL's "QEX" technically-oriented magazine and chairman of the League's Digital Voice Committee.

Ten-Tech (1185 Dolly Parton Parkway, Seiverville, Tennessee 37862) VP Gary Barbour commented that "The addition of Doug to our engineering team will certainly be an asset. Our agenda for the future will continue to offer innovative DSP-based products for both our amateur radio and commercial product lines and Doug brings a great deal of experience to Ten-Tec to help up proceed toward our goal. We are looking forward to having him with us."

The first country to lower its Morse code requirement for full access to all HF bands was Denmark (...not Great Britain as many believe.) On October 15, 1996, Denmark reduced its Morse code proficiency requirement from 60 characters a minute (12 wpm) down to 25 characters per minute (5 wpm). *(Confirmed by EDR, Experimenterende Danske Radioamatoerer, the national Danish radio society.)*

Long range cordless telephones pose an interference threat to ham radio and computer monitors. They have a handset that looks like a cellular phone and are purchased to eliminate the need for a cellphone since they allow free local service through your own home telephone.

They are not sold in stores because they are not FCC certified. But they are widely and openly available for purchase at many web sites over the Internet.

Long range cordless telephones are illegal because they use non-telephone equipment frequencies (only ISM bands at 49 MHz, 900 MHz and 2.4 GHz are authorized) and excessive (5 to 30 watt) power levels. Depending on the band of operation, cordless phone power levels are limited to 150 to 500 microvolts at 3 meters by the FCC's Part 15 rules.

Most long range cellular phones require an external high-mounted antenna and supposedly work up to 50 miles from your home base station telephone depending upon terrain. Legal cordless phones operating on 49 or 900 MHz have a range of about 500 feet. The 2.4 GHz variety have a slightly longer range. Most illegal cordless phones are made in Taiwan.

The ARRL has asked the FCC to investigate and take enforcement against several companies that sell these phones on the Internet. The ARRL took the action in the wake of an interference complaint and numerous reports from the amateur community about sales of the devices, some operating on amateur VHF and UHF frequencies. The ARRL wants reports of interference from these devices which should be sent to <rfi@arrl.org>.

Be aware that QSL card postage in the U.S. increases another penny to mail after July 1st. The U.S. Postal Service has raised the domestic postcard rate by one cent ... from 20¢ to 21¢. The First Class letter rate stays the same: 34¢ for the first ounce, 21¢ for each additional ounce.

Our European correspondent tells us that **the rumors are very strong that Poland will very shortly add shortwave (HF) frequencies to their CEPT-2 codeless class for use only with digital modes such as PSK31.** It could set off a chain reaction across Europe. The use of SSB on HF frequencies in Poland will continue to require demonstrated "conventional" Morse proficiency.

Basically what Poland seems to be saying is that PSK31 is a data emission which is a variation of Morse. It therefore complies with international law S.25.5 which requires manual CW decoding when the operation takes place on HF.

I guess manually typing on a computer keyboard and receiving over speaker "ears" lashed to a computer may constitute "sending by hand" and "receiving by ear." A very interesting interpretation of Morse proficiency indeed ...that is, if it is true.

PSK31 (which stands for Phase Shift Keying, 31 baud) is a new HF digital mode that is catching on like wildfire! Based on RTTY operation, it permits real time keyboard-to-keyboard "conversational CW" QSOs. The 31.25 baud rate was selected because it equates to a typing speed of about 50 wpm.

The three most significant features that makes PSK31 an ideal mode for Amateur digital communications is its spectrum efficiency (the extremely narrow band width), its immunity to noise and QRM and (best of all) the fact that it is basically "free!" Instead of traditional frequency-shift keying, the information is transmitted by patterns of polarity-reversals (i.e. 180-degree phase shifts.)

Designed by the UK's Peter Martinez, G3PLX, PSK31 employs advanced DSP and narrow band (only 31 Hz) techniques. Operation requires an HF transceiver lashed to a computer's serial port. (The PC must have a standard sound card.)

There are low cost (under $100) DSP interface kits on the market or you can build one from Radio Shack parts. You also need special software which is plentiful ...most of it is free shareware.

Small segments of the HF bands are used for PSK31. The calling frequencies that the Amateur community has agreed upon (at least for the time being) are: 1838.15 kHz, 3580.15 kHz, 7070.15 kHz, 7035.15 kHz, 14070.15 kHz, 21080.15 kHz, and 28120.15 kHz. The most popular frequency is 14.070 MHz.

The "heart" of PSK31 is a new variation of the Morse alphabet that G3PLX calls "Varicode." By supplementing Morse's one-bit "dots" and three-bit "dashes," a 128-character ASCII set can be transmitted with up to a ten bit string of 1's and 0's. The 1's are "key down", the 0's are "key up." As in Morse, there is no automatic error-correcting.

Like Samuel Morse, G3PLX allocated the shorter codes to the more common characters. The shortest code in Morse is the commonest letter "e", but in Varicode the shortest code (a "1") is allocated to the space between words. (The letter "e" is "11".)

FCC Amateur Radio Enforcement

James A. Ruppe N4XCV (Rutherfordton, NC) has had his Amateur Radio license cancelled for failure to appear to retake the Technician Plus license examinations as ordered by the FCC on March 27, 2001. The FCC said continued radio transmissions would lead to criminal penalties and equipment seizure.

The FCC has cancelled nine more licenses of Amateurs in Puerto Rico for failure to appear for license retesting. They are: **Octavio Soler WP3EZ,** Aquadilla, PR; **Miguel A. Soto WP3EK**, Moca, PR; **Maria M. Diaz Vazquez WP3FG,** Orocouis, PR; **Jose De Jesus Roman WP3FN,** Las Piedras, PR; **Ernesto Ortiz Diaz WP3FB,** Salinas, PR; **Jose M. Rodriquez De Jesus WP3FF,** Coamo, PR; **Amaldo Cruz Colon WP3FC,** Salinas, PR; **Rafael A. Jiminez Cubero WP3FH,** Camuy, PR and **Luis E. Ramirez Belen WP3FA,** San German, PR.

These amateurs were originally examined by VE teams headed up by: **Edwin Garcia KP4OK, Ivan Rivera WP4JUW** and **Julian Sanchez Colon KP4RA.**

Scott V. Swanson K6PYP (Pacific Palisades., CA (trustee of the K6UQ repeater operating on 145.46/144.86) has been required "...to show, within 20 days, what steps you have taken to prevent interference to coordinated repeater operations on that frequency pair." The K6UQ repeater has been causing interference to a repeater system in Mexico.

In an October 19, 1999 letter to K6PYP, the FCC said it had evidence "that this repeater system has engaged in broadcasting, playing music, transmitting tape recordings and the use of high power base systems and unmodulated carriers to deliberately interfere with a repeater system in Mexico."

The FCC also said it has information that "Coordination on that frequency pair was specifically denied to you by TASMA (the recognized frequency coordinator) on April 19, 2000, on the basis that the repeater pair was already coordinated for 'low level and low power output to avoid any problems with radio operations in Mexico.' to the Inland Empire Amateur Radio Club's W6IER repeater.

Failure to "take immediate steps to resolve the interference to Mexico will result in enforcement action against K6PYP, K6UQ and its control operators. "...you operate at your peril," FCC said.

Paul Ventrelia (Simi Valley.CA) has been cited by the FCC for possible unlicensed Amateur Radio operation. It appears that Ventrelia attempted to renew an expired call sign on Dec. 11, 2000. The license document he submitted for renewal showed obvious alterations.

"Our records show that KA6PPV expired in 1986 and that the call sign was never issued to you. Our records also do not indicate that you hold an Amateur license." Unlicensed operation "will subject you to a fine of up to $7,500 or imprisonment, as well as equipment seizure," FCC said.

Trip Williams (Travelers Rest, SC) was advised that the FCC has information indicating that he has been operating on the Amateur two and ten meter bands without a license using an Amateur call sign he had not been assigned. Such operation subjects him to a fine and imprisonment ...as well as equipment seizure. He was directed to contact the FCC.

Joseph W. Rogerson N4XPZ (Gray. GA) was notified by the FCC on January 22, 2001 that it had monitoring information indicating that he had been interfering with amateurs operating on the 14.300 to 14.302 MHz segment of the 20-meter band."...your signal appeared to have a carrier present in its lower sideband" and "It also appeared that you were aware of these problems."

Even though Rogerson assured the FCC that his station was configured and operating properly, the commission continued to receive complaints about poor and unusually wide signal quality.

The FCC said "In conversations with you on May 15, it became apparent that you were operating a linear amplifier capable of full legal limit but did not understand the operation of the amplifier, did not understand the ALC configuration for the amplifier, had not set or checked the ALC voltage, and did not even possess an operating manual for the amplifier."

The FCC sent Rogerson operating instructions for the amplifier and specific directions regarding the ALC circuit. He is to "...cease use of the amplifier until you have certified to us that you understand its operation and have correctly configured the ALC protection." Failure to correct the problem will result in license revocation or modification to 100 watt or less operation.

Daniel J. Thom WB6DYN, Long Beach, CA had at least 23 club call signs assigned in his name as trustee "Many were granted the same day." He was directed "...to provide justification within 10 days as to the need for each of these call signs."

He was also asked to provide the FCC with club membership information, including meeting times within the past year, next year's schedule and copies of any minutes taken at meetings.

WB6DYN responded by relinquishing several of the call signs and requested instructions on how to transfer certain call signs to other trustees.

The FCC has suggested to the **Cumberland Electric Membership Cooperative (Clarksville, TN)** that their power-line noise elimination recommendations to Paul F. Fulk, Jr. N8ITF (Springfield, TN) are not technically sound.

The power company had suggested that Fulk install insulators in the guy wires of his antenna structure to "limit electrical current that circulates through the guy wires due to ground potential gradient differences" and to install a grounding mat "to lower the grounding resistance of his tower."

"We know of no power-line-related nosie problem in such cases associated with antenna guy wires," FCC said. The power company was asked to contact the ARRL's RFI expert within 10 days "...to determine a solution to the problem."

Joseph E. Mattern KG4NGG (Orlando,FL) has had his Technician Class license modified to preclude operation on the 144-148, 222-225 and 420-450 MHz bands.

"That restriction will automatically expire at midnight, June 10, 2004 if there are no complaints about the operation of your station."

Ted R. Sorenson KC6PQW (Agoura Hills, CA) also had his license modified to prohibit repeater operation in the 2, 1.25 Meter and 70-cm bands for a period of three years.

Last February, Sorenson was monitored transmitting a lengthy broadcast that timed out the W6NUT repeater numerous times. Evidence also showed that he played music and transmitted one-way communications deliberately preventing others from using the repeater.

Sorenson did not deny the allegations and "offered to accept a suspension from talking on the 147.435 repeater for a year as fair punishment." He got more than he bargained for.

420 – 430 MHz AMATEUR BAND AT RISK IN AUSTRALIA, ...SPECTRUM COULD BE THREATENED GLOBALLY!

Radioamateurs "down under" are concerned that their 70-cm ham band could be reallocated to the EES (Essential and Emergency Service.) The process has already started.

The Australian Communications Authority (the ACA is their regulatory authority) is considering making EES spectrum available at 150, 420 and 850 MHz.. But apparently the 420 MHz band is the best choice because of available TETRA equipment. Motorola is a prime maker of TETRA gear.

TETRA, originally an abbreviation for the *Trans-European Trunked Radio System,* is a standard of the *European Telecommunications Standard Institute* (ETSI) for a shared mobile radio network system based on digital technology to support the needs of emergency services throughout Europe. It is available to both private and public users. (TETRA now simply stands for TErrestrial Trunked Radio.)

TETRA combines the features of digital cellular, mobile radio, wireless data and paging with national coverage, high voice quality, fast call set-up and support for private workgroups of users with a greater immunity from interference and eavesdropping. .

TETRA uses Time Division Multiple Access (TDMA – multiplexed) technology with 4 user channels on one radio carrier and 25 kHz spacing between carriers. It is intended to provide both voice and data services for private, military and public safety mobile radio applications with improved performance and spectrum efficiency over existing analog technologies. See: <http:www.ero.dk/-doc98/Official/Pdf/DEC9604E.PDF>.

If the 420 – 430 MHz band were selected in Australia, it would no longer be available to the Amateur Service since it is used by amateurs on a secondary basis. Licensing for the new service would "...by apparatus licenses over-the-counter."

The band is allocated on a primary basis in Australia to the Department of Defense's Radiolocation Service which would share the band so that it could be used by a digital trunked land mobile network to be known as ES-CADCOM (Emergency Services Computer-Aided Call Taking & Dispatch.)

In 1993, the European Radiocommunications Office (ERO) recommended that, where possible, a common core band of frequencies be identified in EC countries to aid interoperability between emergency services.

In 1996, the ERC decided that the frequency requirements for TETRA civil systems "...be met within one or more of the bands 410-430 MHz, 870-876/915-921 MHz, 450-470 MHz and 385-390/395-399.9 MHz." It further stated "...that the bands 410-430 MHz and/or 870-876/915-921 MHz should be used as preference bands" for the seamless pan-European emergency service network.

Only the 70-cm band is available for reallocation in Australia. So far, there has been no agreement between the State Authorities and the ACA to use the 70-cm band for EES except in Western Australia where implementation is underway.

The threat to the 70-cm ham band could intensify worldwide, however, since there is now an WRC-2003 "Agenda item 1.3 -- to consider identification of globally/-regionally harmonized bands, to the extent practicable, for the implementation of future advanced solutions to meet the needs of public protection agencies, including those dealing with emergency situations and disaster relief, and to make regulatory provisions, as necessary, taking into account Resolution 645." See <www.aca.gov.au/frequency/policy420-430.pdf> for more information.

The United Kingdom has a shared PAMR (Public Access Mobile Radio) TETRA system operating at 410 to 430 MHz. (See: <http://www.radio.gov.uk/topics/pmc/-consult/traneuro/traneuro.htm>.) Their 70-cm ham band extends from 430 to 440 MHz as do all Amateur allocations across Europe.

The U.S. *Land Mobile Communications Council* has long wanted to expand commercial PMRS (Private Mobile Radio Service) use between 420 – 430 and 440 – 450 MHz. LMCC is an Arlington, Virginia-based trade organization for the mobile radio industry.

Motorola TETRA radio systems have been used at all recent Summer and Winter Olympic games including the 2000 Sydney games. A TETRA system will also be in operation at the 2002 Winter Olympics scheduled for Salt Lake City next year.

- **By the way, the *Utah Division of Comprehensive Emergency Management* is looking for ham operators** in the Salt Lake City area to assist with communications during the 2002 games from February 8 to 24 and during the Paralympic Games from March 7 to 17. You can sign up at: <http://www.cem.state.ut.us/Radio/2002Quest.htm>

- **Amateur radio operators in Texas and Louisiana provided emergency communications for flood-stricken areas of the two states.** Flood waters generated by "Allison," the year's first Atlantic tropical storm, have now receded but claimed more than a dozen lives. An FCC-declared general communications emergency required amateurs to refrain from using 7285 kHz during the day and 3873 kHz after dark, plus or minus 3kHz, unless they were taking part in the handling of emergency traffic. Hams were active on VHF and UHF providing emergency communications, health and welfare traffic and helping to co-ordinate relief activities. Some 10,000 people were displaced and radioamateurs linked Salvation Army and Red Cross shelters.

INTERNET AIR TRAVEL SITES FIGHT FOR BUSINESS

Solving the dilemma: "Which online travel service to use?"

The airline travel business is incredibly competitive. There are dozens of travel sites ...and each claims to know where the lowest fares and best deals are located. They either sell you the information (such as done at: <www.bestfares.com>) or sell you the ticket. Analysts at Forrester Research, Inc. in Cambridge, Mass., estimate that online travel sales will increase 38% this year, from $12.2 billion to $16.7 billion with nearly 19 million households buying online. It is, by far, the biggest e-commerce category on the Web.

For the last five years, the big two in web-booked air travel (with a 70% market share) have been Microsoft-backed Expedia and Travelocity, which is controlled by Sabre, the giant airline computer reservation system.

Sabre, originally owned by American Airlines and operated from their Tulsa, Oklahoma data processing center, was opened to travel agents in 1976. In 1996, AMR (parent of American Airlines) spun off a minority interest in Sabre through an Initial Public Offering. Travelocity.com was launched the same year. Both still operate from Tulsa. According to the *Wall Street Journal,* "Sabre's Travelocity.com is now the industry leader in online travel.

You can even offer to pay a lower price and hope that some airline will bite at Priceline.com.

Now, new Internet-based air travel sites owned by major competitors in the airline industry itself are coming into play. It is about to put travel agents out of business and drastically cut into Expedias and Travelocitys market share.

Hotwire

Last November, six airlines (Northwest, United, American, Continental, US Airways, and America West) launched <www.Hotwire.com>, an independent service that (like Priceline.com) markets last minute empty seats. (The airlines fly 500,000 to 700,000 empty seats per day.) While the six airlines shelled out $75 million to finance "Hotwire", they have no control over its day-to-day operation. A firewall prevents the airlines from learning the number of seats contributed to the inventory by each carrier, thus diminishing the chance for price wars.

Air travelers place a bid for tickets at <www.Priceline.com>. When you're the one suggesting the price, you never really know whether you could have gotten it cheaper. At Hotwire, you aren't obligated to buy, as you are with Priceline. Both web services use only major air carriers.

"Hotwire" buyers are offered the lowest price for requested flight dates and cities, but don't learn the carrier or the flight times until they've purchased the ticket. Furthermore, there are no seat assignments or frequent flyer miles ...and tickets can not be refunded, transferred, exchanged or changed in any way. If you don't take the trip you've lost your money.

Delta Air Lines does not participate in the Hotwire program since it has an ownership position in Priceline.com. And Southwest already specializes in discount fares. Hotwire has now expanded into international travel, hotel rooms and car rentals.

Orbitz opens, gets swamped!

Two years ago, the nation's five largest air carriers (United, Delta, Continental, Northwest, and American) put up $145 million in seed money and announced plans to launch <www.Orbitz.com> -- a web-site that would sift through fares from some 450 airlines worldwide. Dallas-based Southwest Airlines was the only major air carrier to "opt out" of the Orbitz system completely.

Orbitz's biggest advantage is that it's the only place on the Web right now to find and book, in one place, Internet-only fares from two dozen or more airlines. (Neither Denver-based Frontier Airlines nor Southwest provide their Web-fares to Orbitz.)

Orbitz claims to be able "...to scan through 2 billion possibilities in seconds" using powerful search engine technology licensed from ITA Software. ITA is a small privately-held Cambridge, Mass. company founded by computer scientists from the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology. Check their website at: <http://www.itasoftware.com/>. (After seeing what ITA is doing for Orbitz, Delta Airlines is now in the process of changing their in-house "Deltamatic" pricing and booking system to ITA Software.)

Some critics say the long term objective of Chicago-based Orbitz is ultimately to control fares, reduce competition, curb startup carriers and pave the way for higher prices. Orbitz denies the allegations and says it "will enhance competition by listing fares from all airlines without bias" ...rather than steer travelers toward flights offered by travel site backers or big advertisers. Many are not convinced.

Earlier this year, twenty-four state attorneys general requested a Dept. of Transportation investigation into the Orbitz business model. They said they were concerned that the airlines might use their substantial market share to engage in unfair methods of competition. (And that indeed may be the case!)

Together, the five founding airlines already control 85 percent of the nation's air travel and many insiders believe that the Orbitz operation is a case of the "...the fox guarding the hen house." The Department of Justice is still investigating possible antitrust violations. The Department of Justice is still investigating possible antitrust violations. But last month, Orbitz got the go-ahead from the DOT to launch as planned. After evaluating their business plan, the agency said new competition in the online

travel agency business "...is inherently desirable." Orbitz said it obtains its fare and schedule information from sources already used by its competitors – and that it will not have special access to lower fares from any airlines.

Orbitz, which had been testing their site since February, finally opened its virtual door for full scale business on Monday, June 4th. It sold more than 20,000 airline tickets during the first two days alone totaling some $4.5 million in sales ...far more than was anticipated and more than the site could efficiently handle. (Actually the first two days sales exceeded the previous three month "trial site" sales put together.) Orbitz continued to operate, but very slowly. And requests for customer assistance generally went unanswered. Orbitz said it was responding by doubling its call center representatives to 200.

In a comparison test against Expedia and Travelocity, Orbitz generally offered the lowest fare *when frequent flier miles can be earned.* The big question is will the various airline-owned websites become unnecessary now that carriers have agreed to offer to Orbitz all the fares they put on their own sites.

Customers aren't told, but Orbitz also uses Artificial Intelligence (AI) "decision support" technology from "TripleHop" which was developed at the Nagoya Institute of Technology in Japan. Orbitz customers must register and the site gathers and remembers "behavioral profiles" about you as you roam around or make selections. The end result is that the customer is presented with highly tailored suggestions to increase the individual's likelihood to purchase.

TripleHop's "Tripmatcher Recommendation Engine" operates similar to what an experienced travel agent would do when you visit their agency. After it collects enough information, customers can expect targeted e-mails about their interests. See: <www.TripleHop.com> to learn more about how this works. They have an interesting online demo at: <http://showcase.triplehop.com/-TripMatcher/searchPage.asp>.

Orbitz also provides detailed information on weather and flight status, and on driving conditions to and from the airport.

Southwest Airlines

Dallas-based low-fare carrier Southwest Airlines has now filed a federal suit against Orbitz alleging it is publishing "false and misleading" Southwest airfare and route information ...and is guilty of trademark infringement for using its logo and unfair competition.

While air travelers will not be able to purchase Southwest Airline tickets on Orbitz, Southwest's "list price" fares and schedules do appear in Orbitz's search results. Southwest objects to Orbitz' statement that it is "supported and endorsed by the major U.S. airlines" and that it provides "the most low fares."

It said Orbitz failed to include many of Southwest's lowest fares and gave impractical travel routes placing it in a negative light. It wants all of their offers removed from Orbitz and seeks unspecified damages. "We are not interested in becoming dependent on a company owned by a cartel of our competitors," they said.

Orbitz answered by saying it "...would be happy to display lower Southwest fares not made available through airline clearinghouses" but that it will continue to display Southwest's publicly-available fare and schedule information. At press time, Orbitz had removed the Southwest logo from their website, but continued their "published" fares.

Southwest is headquartered at and flies out of Dallas (TX) Love Field. Orbitz has conveniently left DAL (Love Field) out of its list of airport codes. A traveler looking to travel to/from Dallas who doesn't know the correct three letter code is only given the airport code for the Dallas/Ft. Worth International Airport (DFW) from where Orbitz founding five carriers depart.

A statement is displayed stating that Southwest tickets can not be purchased from Orbitz and that "The flights and fares shown are based on information published by the airline. The airline may offer lower non-published fares or, on some of these flights, may have sold out of the lowest fares. Please contact that airline directly to confirm the availability of fares and seats and to purchase these tickets." No link is provided to the airline, however.

We found Southwest's (actual) "street" prices to be lower than their (published) "list" price! For example: The lowest Southwest airfare from Dallas to Houston (leaving July 9th and returning July 12th) is listed on Orbitz as $112 round trip. The Southwest site had a $60 fare (with 7 day advance purchase) and their same day purchase "promotional fare" was $106. This was for a flight with no Saturday night "stay over."

Southwest sells online only through its <http://www.-southwest.com> site and does not offer online tickets elsewhere ...even through Expedia and Travelocity.

To compete, Expedia and Travelocity are now in the process of adding discounted tickets "with strings attached" -- similar to those offered on Hotwire. The bottom line to all of this is that no single site has all the answers. You still need to check what now is fast becoming the "big four": Expedia, Hotwire, Orbitz and Travelocity. And certainly don't forget to check Southwest Airlines. You even might throw out a price on Priceline.com.

Then there are the charter airlines that specialize in vacations. Their operation and ticketing is primarily handled by tour operators and travel agencies who are members of the USTOA (United States Tour Operators Association.) See: <www.ustoa.com>. They frequently have "air only" (unsold vacation) seats available at a still lower price. Among these tour companies are MLT Vacations, Sun Country Vacations, Fun Jet, Adventure Tours ...and dozens of others. But that's another story.